

JAN 26 2010

Appl. No. 10/798,531  
Declaration of prior invention  
Reply to office action of October 6, 2009

PATENT  
Case No. N0185US

## IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

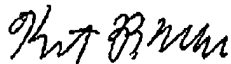
Appl. No. : 10/798,531  
Applicants : Kurt Brooks Uhlir, et al.  
Filed : March 11, 2004  
Titled : APPLICATION PROGRAMMING INTERFACE FOR  
GEOGRAPHIC DATA IN COMPUTER GAMES

DECLARATION UNDER 37 C.F.R. § 1.131

The undersigned, KURT BROOKS UHLIR, CHRISTOPHER DOUGHERTY,  
MICHAEL V. SHUMAN, and ROY CASINO, hereby declare that:

1. We are co-inventors of the invention described and claimed in the above-identified patent application.
2. Before December 16, 2003, we invented a computer game system and an associated method of operation. The computer game system and method thereof included, *inter alia*, a map database containing real-world navigation data that represent roads in a real-world geographic locale and an application programming interface program configured for accepting requests for data from the game, for accessing the data from the map database, and for providing the data in a suitable format to present a game play scenario on a user interface. Also, description of a game play scenario corresponding to a virtual position was provided.
3. Before December 16, 2003, we prepared invention disclosure statements describing our inventive ideas. We provided the invention disclosure statements to the Legal Department of the assignee of the subject patent application. Copies of invention disclosure statements prepared by us prior to December 16, 2003 disclosing the claimed invention are attached hereto (Exhibits 1 and 2).
4. All statements made herein of my own knowledge are true and that all statements made on information and belief are believed to be true, and further these statements are made with the knowledge that willful false statements and the like so made are punishable by fine or

imprisonment, or both, under Section 1001 of Title 18 of the United States Code, and that such willful statements may jeopardize the validity of the application or any patent issuing thereon.



KURT BROOKS UHLIR

1/21/10

Date



CHRISTOPHER DOUGHERTY

1/21/10

Date



MICHAEL V. SHUMAN

1/21/10

Date



ROY CASINO

1-21-10

Date

NAVTEQ North America, LLC  
425 West Randolph Street  
Chicago, IL 60606  
(312) 780-3054

**Exhibit 1** JAN 26 2010NAVIGATION TECHNOLOGIES CORPORATION  
INVENTION DISCLOSURE STATEMENT FORM(Return electronic copy and  
fully executed hard copy to Legal Department)

IDS # [REDACTED]

(to be filled out by Legal Dept.)

Shorthand Name for Invention: Ideas for a "Game API" for Use in Creating Games

Developers Who Contributed to Invention:

1. <u>Roy Casino</u>	2. <u>Mike Shuman</u>
3. <u>Chris Dougherty</u>	4. <u>Kurt Uhler</u>
5. _____	6. _____
7. _____	8. _____

Date (or Month) on Which Development Began:	[REDACTED]
If Known, First Date (if any) on Which Development was:	
(a) described in a CONFIDENTIAL document released outside of NTC	
(b) described in a CONFIDENTIAL conversation with a non-NTC employee	
(c) described in a NON-confidential document released outside of NTC	
(d) described in a NON-confidential conversation with a non-NTC employee	
(e) included in any version of a product released outside of NTC	
(f) used internally at NTC in the normal course of operations:	
(g) discussed at a Brainstorming Session for IDS No. _____	

## Summary of Invention:

NTC currently offers SDAL and NavTools for use in creating in-vehicle navigation applications. Furthermore, NTC offers RTM for use in creating real-time on-board or off-board applications. The idea proposed in this IDS is for an API that will offer interfaces for creating navigation based gaming applications. The general idea of NTC offering a game API as well as some specific ideas are proposed in this IDS. The ideas and related concepts for the games are proposed in numerous other IDS forms. This IDS directs its focus on the new and unique ideas necessary for the gaming API. (Other documents exist that detail the business reasons justifying NTC's interest in being a part of the huge game market.)

## Key Words for Invention:

Navigation, games, API, Ground, Truth, Gaming, Electronic Games, Video Games, LBS, LBG

## Advantages of Invention (to the extent known):

Allows one to easily create applications using NAVTECH data  
 Allows NAVTECH data to become more widely known based on name recognition through people playing games on PCs, phones, internet, etc.  
 Opens up a new business market for NAVTECH data simply by offering a new API  
 API could be based heavily on SDAL and NavTools code making development more effective

## Detailed Description of Invention

- describe function(s) performed
- describe with particularity the way in which each function is achieved (e.g., if the invention is a process, describe each step of the process):

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The Game API will offer functions broken into four key areas that differ from current NTC APIs:

- I. Functions to convert NAVTECH data to other formats suitable for games
- II. Functions for high-speed display necessary for games
- III. Functions for aesthetically pleasing display formats necessary for games
- IV. Function to easily integrate NAVTECH data with other data content necessary for games

Each of the four areas will be described in more detail below.

- I. Functions to convert NAVTECH data to other formats suitable for games

#### Overview:

These functions allow conversion of NAVTECH data to formats for use with 3-d display, cell phone display, PC gaming via internet display, and others. The idea here is that the NAVTECH database should remain focused on navigation applications. In turn, these functions will use the NAVTECH database, but offer data necessary for game play in one of the game formats. For example, a "cannonball run" type of racing game would require the NAVTECH data to appear in 3-d format as if a car were driving the roads. This would allow drivers to race across the United States (or other region), allow them to choose to drive on any road, allow the games to drive realistic routes with real knowledge of speed limits, signage, and more integrated into their game play.

#### Example:

3-d display: The 3-d display functions will allow games to "travel" along roads from a driver's perspective. For example, a driving game could allow one to race a route from Chicago to St. Louis.

#### Functions:

*3\_d\_display(link ID, location, direction\_of\_travel, DisplayInfo)*

link ID (input)...the NAVTECH link ID of the desired link for display  
 location (input)...the actual location along the link (expressed in percentage along the link)  
 direction\_of\_travel (input)...direction of travel (from reference node or to reference node)  
 DisplayInfo (output)...a structure (not defined here) that holds all information necessary for displaying a 3-d image of the road and related attributes. The image drawn on a display using this information would be a computer rendered view of what a driver would see from a car located on the road at this point.

#### Example:

internet\_display: The internet display functions will allow incremental updates of internet displays for game play. For example, a first display screen would show full detail of a certain geographic area in 2d or full 3d. Further updates to the screen will only send necessary information to indicate changes to the current display. This method of sending only changes will allow faster updates necessary for game play over the internet. A function like this could allow a set of gamers across the nation connected only by internet connections to play competitive games based on NAVTECH data with each other in real-time.

*internet\_display(region, 2d\_3d\_flag, location, DisplayInfo)*

region (input)...bounding box region to display  
 2d\_3d\_flag (input)...whether 2d or 3d display should be shown  
 location (input)... gamer's location on the requested map  
 DisplayInfo (output)... a structure (not defined here) that holds all information necessary for displaying an image of the road and related attributes. Further updates to this display would only send changes to allow for fast transmission across internet connections and fast display updates.

More:

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Those are only two representative type functions that could exist in a game API. Clearly, numerous additional functions will be necessary in the actual implementation.

## II. Functions for high-speed display necessary for games

### Overview:

Current NavTools display tools are not optimized for high-speed updates or continuous movement. The game API will require functions that support these types of scenarios. This will allow a driving game, for example, to give the appearance that a vehicle is being driven along a road way created using NAVTECH data.

### Requirements:

No new functions will necessarily be required versus current NavTools functions as much as more optimization will be required. Concepts such as high speed polygon display and other video game derived display technologies will have to be incorporated into the game API tool set. This integration of video game technology into a game API will allow the NAVTECH database to be drawn in 2d or 3d at very high speeds.

## III. Functions for aesthetically pleasing display formats necessary for games

### Overview:

Current NTC APIs display maps for navigation purposes. The game API will require changes so that displays can be oriented to more aesthetically pleasing display formats. Formats that include road widths and lane stripes will be incorporated into the display functions. Furthermore, attributes such as road names will be optional in the display as road names may not always be necessary for games. Moreover, games may choose to leave off the road names for the sake of speed.

### Requirements:

The display formats for games will require that NAVTECH data (intended for navigation applications) will have additional visual information attached during the process of preparing for display. For example, a game may query for a display that includes stripes on the lanes and shoulders along the edges of the road. Further examples are the inclusion of road signs so that a game player sees a speed limit sign, for example, pass by as he/she drives.

### Function:

*set\_display\_parameters( visual\_attribute\_list)*

*visual\_attribute\_list* (input)...this parameter allows one to set visual attributes such as whether lane stripes should be added to the roads for display, whether signs should be added to the display, whether shoulders or curbs should be added, and other attributes of this sort intended to visually aid a driver playing a game and not necessarily aiding in navigation.

## IV. Function to easily integrate NAVTECH data with other data content necessary for games

### Overview:

Many games will also desire to integrate information such as the look of other vehicles on the roads, traffic information on the roads, the look of buildings along the road, and other such examples. The game API will allow the game designers access to the polygonal display tools so that these additional features could easily be integrated with the NAVTECH data. For example, a game designer may want to populate the roads being driven with actual vehicles on the market. In that case, the game designer would obtain vehicle modeling information from other sources and feed it to the game API so that the vehicles could be placed on a 3-d NAVTECH road map display.

### Function:

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*integrate\_external\_information(polygonal\_information, location)*

*polygonal\_information (input)...*the polygon modeling information necessary to render a particular geometrical shape such as a building or vehicle.  
*location (input)...*the location to display the *polygonal\_information*. This would allow one to place buildings along the road or other vehicles along the road.

Please place an "X" next to the appropriate statement:

X

No design documents exist

The following design documents exist (and copies are attached): \_\_\_\_\_

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Signature: Roy Casino

(of preparer-developer)

Date: Type Name: Roy Casino

Signature(s) of Contributing Developers:

1. Name: Date: 2. Name: Date: 3. Name: Robert B. MannDate: 

4. Name: \_\_\_\_\_

Date: \_\_\_\_\_

5. Name: \_\_\_\_\_

Date: \_\_\_\_\_

6. Name: \_\_\_\_\_

Date: \_\_\_\_\_

7. Name: \_\_\_\_\_

Date: \_\_\_\_\_

  
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**Exhibit 2****NAVIGATION TECHNOLOGIES CORPORATION  
INVENTION DISCLOSURE STATEMENT FORM**(Return electronic copy and  
fully executed hard copy to Legal Department)IDS # 

(to be filled out by Legal Dept.)

**Shorthand Name for Invention:** NT Data-Based EMS Games

**Developers Who Contributed to Invention:**

1. <u>Chris Dougherty</u>	2. <u>Mike Shuman</u>
3. <u>Kurt Uhler</u>	4. _____
5. _____	6. _____
7. _____	8. _____

<b>Date (or Month) on Which Development Began:</b>	
<b>If Known, First Date (if any) on Which Development was:</b>	
(a) described in a <b>CONFIDENTIAL</b> document released outside of NTC	
(b) described in a <b>CONFIDENTIAL</b> conversation with a non-NTC employee	
(c) described in a <b>NON-confidential</b> document released outside of NTC	
(d) described in a <b>NON-confidential</b> conversation with a non-NTC employee	
(e) included in any version of a product released outside of NTC	
(f) used internally at NTC in the normal course of operations:	
(g) discussed at a Brainstorming Session for IDS No. _____	

**Summary of Invention:**

This idea proposes tying digital map data and/or location-based content (e.g. traffic, weather, POIs, etc.), to the EMS/Law Enforcement themed electronic games. This would include fire fighting, medical emergency service (ambulance/search and rescue), and police "chase" games.

There are two approaches that can be taken to break into this category – a business approach that entails offering digital map data to EMS type game developers that would expand and enhance their existing products, or developing original spatially-related EMS game concepts and offering them to game publishers or developers.

From a new business standpoint, the sales pitch to the developers would be that digital map data adds a level of realism and personalization (fight fires or chase criminals in your hometown, get stuck in traffic that's actually affecting your hometown road network at this minute, etc.), that would significantly differentiate their product in the marketplace.

For example a fire fighting game could be based on actual road network data of a real city, and include options for choosing the best route to a fire and the capability of adding real-time traffic to the selected route. The same type of options and realism could be applied to an EMS vehicle game where the player must reach an accident victim and rush him the hospital.

Police chases could include the added realism of real neighborhoods and real traffic and (when available in the future) crime stat overlays to enhance the realism..

**Key Words for Invention:**

Games, Ground Truth Gaming, location-based games, RTM, real-time traffic, EMS

**Advantages of Invention (to the extent known):**

New market and revenue stream for NT

Extends the NT brand to a wider audience

Adds realism to games and allows developers or publishers to differentiate their product offerings.

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**Detailed Description of Invention**

- describe function(s) performed
- describe with particularity the way in which each function is achieved (e.g., if the invention is a process, describe each step of the process):

NT could play different roles when developing this concept. They could approach game companies and sell them the idea to use maps and the game idea, and have the game company develop the game and pay for our data. Companies that develop road network-based games already use methods to collect the 3D data (buildings, landmarks, etc.).

Adding digital map data to existing games could be approached in a number of different ways. The simplest approach would be to simply offer NT Map data to developers with the assumption that they would write the software to apply NT data to their games.

Another approach would be to offer NT data that has been massaged or packaged to easily fit into their games.

Existing games that would benefit from digital map enhancements include:

911

World's Scariest Police Chases

**Original Game Concepts:****Law Enforcement**

This game would involve a law enforcement response to a crime committed in a real city setting. After locating and choosing the best route to the scene of the crime, the player get involved in a chase through the actual streets of a specific city. With NT's pedestrian routing capabilities, the chase could also be on foot as well.

**EMS**

This game would place a player in the role of a fireman or ambulance driver. The player would have to race to the scene of a fire or emergency situation (natural disaster, etc) and contend with difficulties such as real-time traffic problems (online game version) or rerouting scenarios due to road closures caused by earthquakes, explosions, etc.. Once the victims are located they then must be transported to the hospital in a race against the clock (based on the state of the victim).

Please place an "X" next to the appropriate statement:

X No design documents exist

The following design documents exist (and copies are attached): \_\_\_\_\_

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Signature: \_\_\_\_\_  
(of preparer-developer)

Date: \_\_\_\_\_

Type Name: Chris Dougherty

Signature(s) of Contributing Developers:

1. Name: Therese P. Mahi

Date: \_\_\_\_\_

2. Name: [Signature]

Date: \_\_\_\_\_

3. Name: \_\_\_\_\_

Date: \_\_\_\_\_

4. Name: \_\_\_\_\_

Date: \_\_\_\_\_

5. Name: \_\_\_\_\_

Date: \_\_\_\_\_

6. Name: \_\_\_\_\_

Date: \_\_\_\_\_

7. Name: \_\_\_\_\_

Date: \_\_\_\_\_

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